

method for growing a Group III-V nitride semiconductor ($\text{Al}_x\text{Ga}_y\text{In}_z\text{N}$) layer (26) on a sapphire substrate (21) having strip-shaped ditches provided in the upper portion. Asai et al do not disclose separating the Group III-V nitride semiconductor layer from the substrate. To the contrary, Asai et al disclose the sapphire substrate forming part of the device to be fabricated (see column 1, lines 22-50; column 5, lines 8-32; Figure 1).

Further, Cook (Figures 1 and 2) teaches a step of growing a layer (13) on a flat main substrate (11) followed by removing the layer from the substrate while irradiating a laser beam (19) from a side of the substrate above the top surface of the layer. The patentee notes (see column 2, lines 42-44) that the composition of the layer and substrate are AlGaAs and GaAs or GaAs and Ge, and that the melting point of the substrate is lower than that of the layer. Cook also teaches (see column 1, line 59, to column 2, line 9) that the layer absorbs the laser beam and generates heat, which is then transferred to the substrate to melt the substrate and permit separation of the layer from the substrate.

However, claim 1 as amended performs the irradiation upon the semiconductor layer from the surface opposite the main surface of the substrate. In such an embodiment, it is necessary for the laser beam to have a wavelength that penetrates the transparent substrate, i.e., the substrate has a higher melting point than the semiconductor layer, and that generates heat at the junction of the substrate and semiconductor layer as the beam is absorbed by the semiconductor layer. Therefore, the irradiating step presently claimed is distinctly different from that of Cook as the Examiner explained in his statement of reasons for allowable subject matter at paragraph 7, page 4, of the November 18, 2002 Office Action.

Since neither Asai et al or Cook teach each feature of the claimed invention, and since neither Asai et al or Cook provide any motivation or suggestion to modify the electronic device of Asai et al to remove the substrate, i.e., Asai et al teach the substrate is to remain part of the electronic device, a *prima facie* case of obviousness has not been

set forth for the rejection of claims 1 and 2. Therefore, the rejection, under § 103(a), of claims 1 and 2 is now improper and should be withdrawn.

Conclusion

Having responded to the rejection set forth in the Office Action, it is submitted that the claims are now in condition for allowance. An early and favorable Notice of Allowance is respectfully solicited. In the event that the Examiner is of the opinion that a brief telephone or personal interview will facilitate allowance of one or more of the above claims, the Examiner is courteously requested to contact Applicant's undersigned representative.

Respectfully submitted,



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MARKED-UP VERSION OF AMENDED CLAIMS

IN THE CLAIMS:

Please amend claim 1 as follows.

1. (Twice Amended) A method of manufacturing a nitride semiconductor substrate, comprising:

a first step of selectively forming a raised and recessed region in [the] an upper portion of a base substrate;

a second step of growing a semiconductor layer of nitride on said raised and recessed region in said upper portion of said base substrate so that a recessed portion in said raised and recessed region is filled and the upper surface thereof is even; and

a third step of irradiating an interface between said semiconductor layer and said base substrate with a laser beam, thereby separating said semiconductor layer from said base substrate to form a semiconductor substrate from said semiconductor layer,

wherein in said third step, the laser beam is irradiated upon said semiconductor layer from the surface opposite to the upper portion of said base substrate.